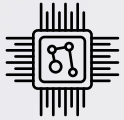


SPPM-NB10-DG

650W - 675W

BIFACIAL DOUBLE GLASS MODULE



Revolutionary BC Technology

Moves the electrical circuitry 100% to the rear of the module, allowing the front surface to capture sunlight over its full area with a clean, seamless appearance.



Higher efficiency

Delivers module conversion efficiency of up to 25.4%, with a power output range of 650W–675W per module.



Superior Temperature Coefficient

Maintains full power output performance even in extreme heat conditions.



Partial Shading Optimisation

Overcomes conventional shading limitations, maximizing power generation efficiency across all lighting conditions.



Premium Aesthetic Values

Enhances the visual appeal of rooftops and buildings with a seamless, deep-black front surface.



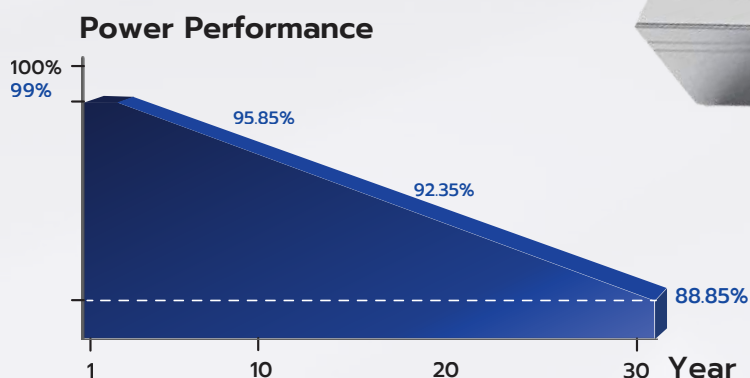
1500 VDC IEC Compatibility

Supports series-string (string circuit) connections up to a maximum of 1500 Volts.



Doubleglass Bifacial

A double-glass structure that increases mechanical strength and extends the module's service life.



Linear Performance Warranty

15 Year Product Warranty

30 Year Linear Power Warranty

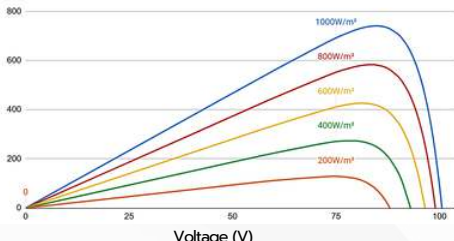
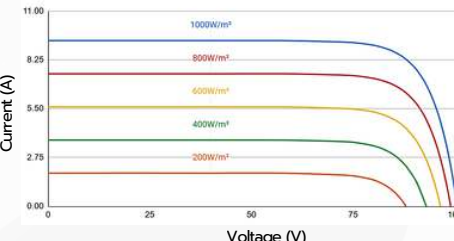
0.35% Annual Degradation Over 25 years

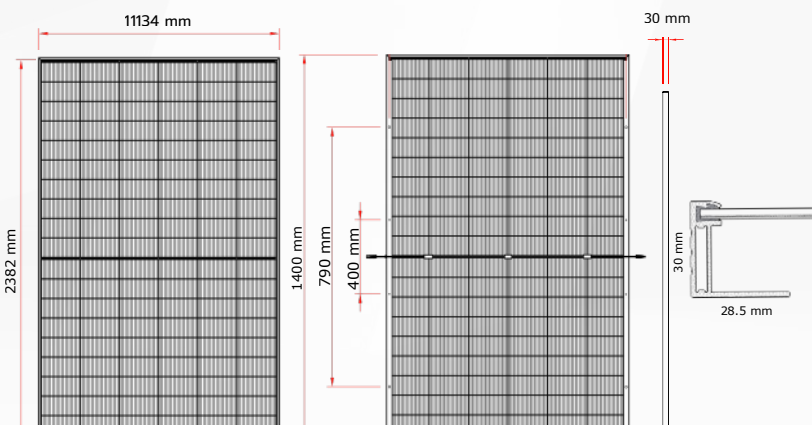
ELECTRICAL DATA (STC & NOCT & BNPI)																		
TYPE	SPPM-NB10-DG 650W			SPPM-NB10-DG 655W			SPPM-NB10-DG 660W			SPPM-NB10-DG 665W			SPPM-NB10-DG 670W			SPPM-NB10-GG 675W		
Testing Condition	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI	STC	NOCT	BNPI
Peak Power Watts-PMAX (Wp)	650	493	715	655	496.8	720	660	500.5	726	665	504.3	731.5	670	508.1	737	675	511.9	742.5
Power Selection (W)	0 ~ +3 %			0 ~ +3 %			0 ~ +3 %			0 ~ +3 %			0 ~ +3 %			0 ~ +3 %		
Maximum Power Voltage - VMPP (V)	45.30	42.94	45.30	45.40	43.04	45.40	45.50	43.13	45.50	45.60	43.23	45.60	45.70	43.32	45.70	45.8	43.42	45.80
Maximum Power Current - IMPP (A)	14.35	11.48	15.79	14.43	11.54	15.87	14.51	11.60	15.96	14.59	11.67	16.04	14.67	11.73	16.14	14.74	11.79	16.21
Open Circuit Voltage - VOC (V)	54.00	51.62	54.00	54.10	51.72	54.10	54.20	51.82	54.20	54.40	52.01	54.50	54.60	52.20	54.60	54.80	52.39	54.80
Short Circuit Current - ISC (A)	15.06	12.17	16.57	15.12	12.22	16.63	15.18	12.27	16.70	15.24	12.31	16.76	15.30	12.36	16.83	15.36	12.41	16.90
Module Efficiency (%)	24.1 %			24.2 %			24.4 %			24.6 %			24.8 %			25.0 %		

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. BNPI: Irradiance: front 1000W/m², rear 135W/m², Temperature 25°C, Air Mass AM1.5 *Measuring tolerance: ±3%.

Electrical characteristics with di erent power bin (reference to 5% & 20% backside power gain)																		
TYPE	SPPM-NB10-DG 650W			SPPM-NB10-DG 655W			SPPM-NB10-DG 660W			SPPM-NB10-DG 665W			SPPM-NB10-DG 670W			SPPM-NB10-GG 675W		
Backside Power Gain	5%	10%	20%	5%	10%	20%	5%	10%	20%	5%	10%	20%	5%	10%	20%	5%	10%	20%
Peak Power Watts-PMAX (Wp)	682.5	715	780	687.8	720.5	786	693	726	792	693	726	792	703.5	737	804	708.8	742.5	810
Maximum Power Voltage-VMPP (V)	45.30	45.30	45.30	45.40	45.40	45.40	45.50	45.50	45.50	45.50	45.50	45.50	45.70	45.70	45.70	45.80	45.80	45.80
Maximum Power Current-IMPP (A)	15.07	15.79	17.22	15.15	15.87	17.32	15.24	15.96	17.41	15.24	15.96	17.41	15.40	16.14	17.60	15.48	16.21	17.69
Open Circuit Voltage-VOC (V)	54.00	54.00	54.00	54.10	54.10	54.10	54.20	54.20	54.20	54.20	54.20	54.20	54.60	54.60	54.60	54.80	54.80	54.80
Short Circuit Current - ISC (A)	15.81	16.57	18.07	15.88	16.63	18.14	15.94	16.70	18.22	15.94	16.70	18.22	16.07	16.83	18.36	16.13	16.90	18.43

Power Bifaciality: 80±5%.

CURVES OF PV MODULE		TEMPERATURE RATINGS		
I-V CURVES OF PV MODULE (660W)		NOCT (Nominal Operating Cell Temperature) (C°)		45° ± 2
		Temp Coefficient Pmax (%/°C)		- 0.26%
		Temp Coefficient Voc (%/°C)		- 0.22%
		Temp Coefficient Isc (%/°C)		+ 0.05%
APPLICATION CONDITIONS				
Operating Temperature		-40 to +85 °C		
Maximum System Voltage		1500V DC (IEC)		
Max Series Fuse Rating		30A		

MECHANICAL DATA										THCHNICAL DRAWING									
Solar Cells	Revolutionary BC (Back Contact) Technology																		
No. of Cells	144 cells (72 full-cells / 144 half-cut)																		
Module Dimensions	2382 x 11134 x 30 mm																		
Weight	32.2 kg																		
Front Glass	2.0 mm AR coated heat strengthened-Glass																		
Back Glass	2.0 mm heat strengthened-Glass																		
Frame	30 mm Anodized Aluminium Alloy																		
J-Box	IP68 rated with 3 diodes																		
Cables	4.0 mm ²																		
Cable Length	200 mm / 200 mm (can be customized)																		
Connector	Compatible with 1500V systems																		

PACKAGING CONFIGURATION

Modules per box : 36 pieces

Modules per 40' container : 720 pieces

Headquarter : Solar PPM Co . , Ltd.

Address : 205/1 Nakhon Ratchasima Rd., Dusit, Bangkok 10300, Thailand

Manufacturer : Solar PPM Co . , Ltd. (Chonburi)

Address : 17/9-10 Moo 3, Nong Khong Khok Subdistrict, Mueang District, Chonburi 20000, Thailand

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